OIPE JC46
APR 11 2005
PATENT & TRADEMARK OFFICE

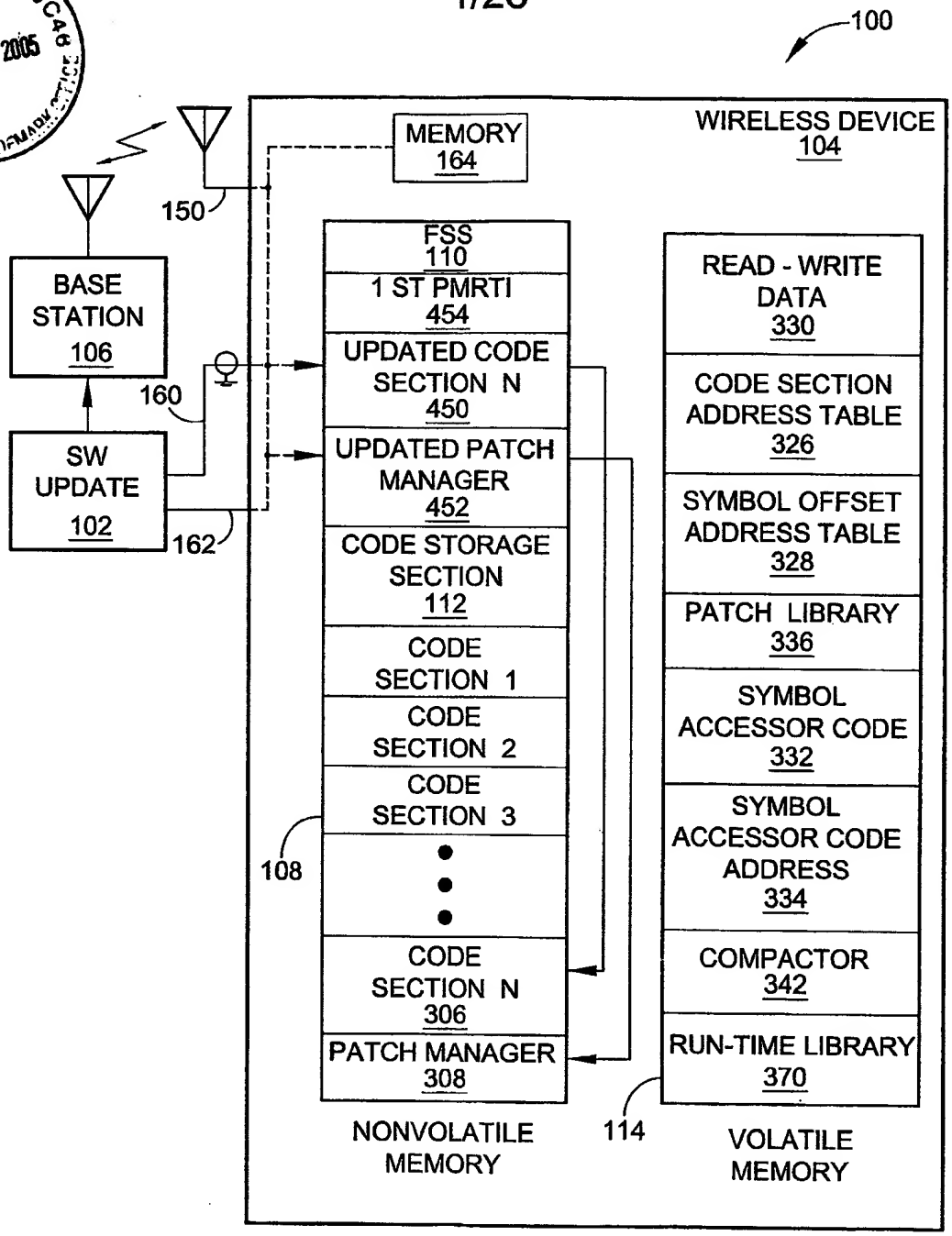

FIG. 1

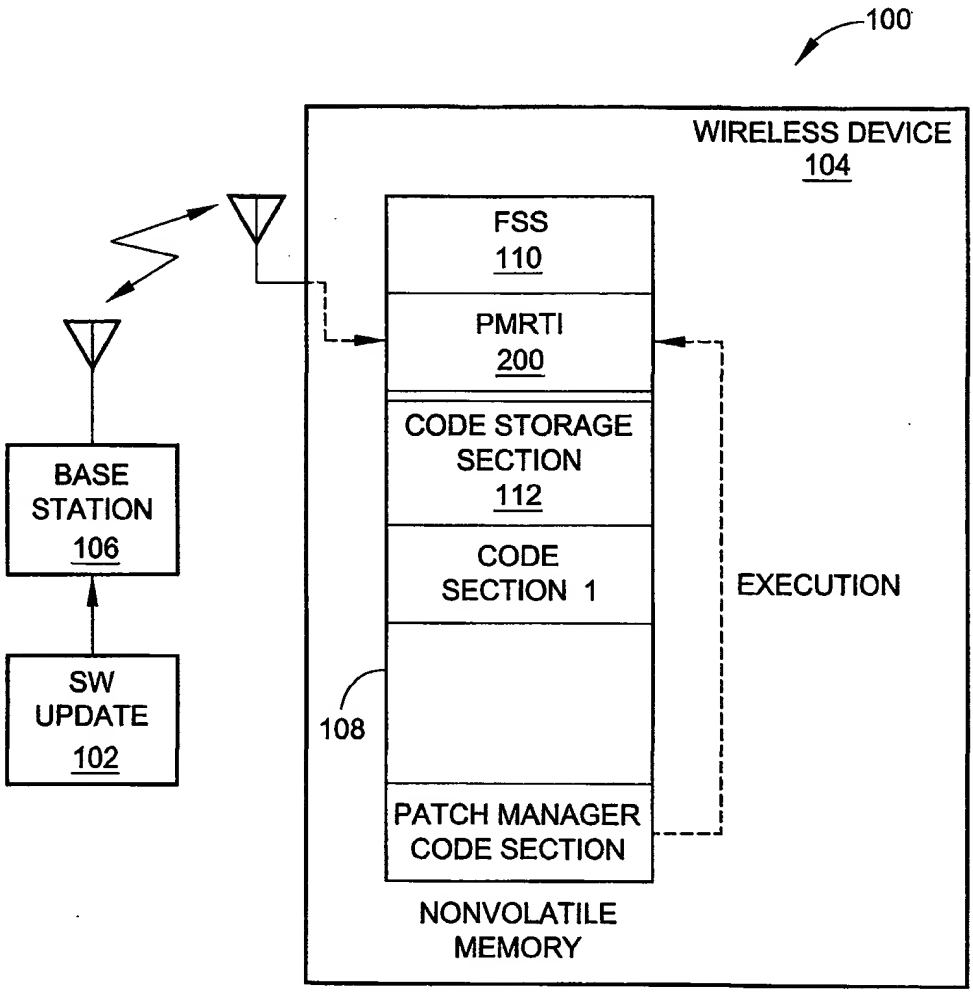
100
WIRELESS DEVICE
104
FSS
110
PMRTI
200
CODE STORAGE SECTION
112
CODE SECTION 1
108
PATCH MANAGER CODE SECTION
NONVOLATILE MEMORY
EXECUTION
BASE STATION
106
SW UPDATE
102

FIG. 2

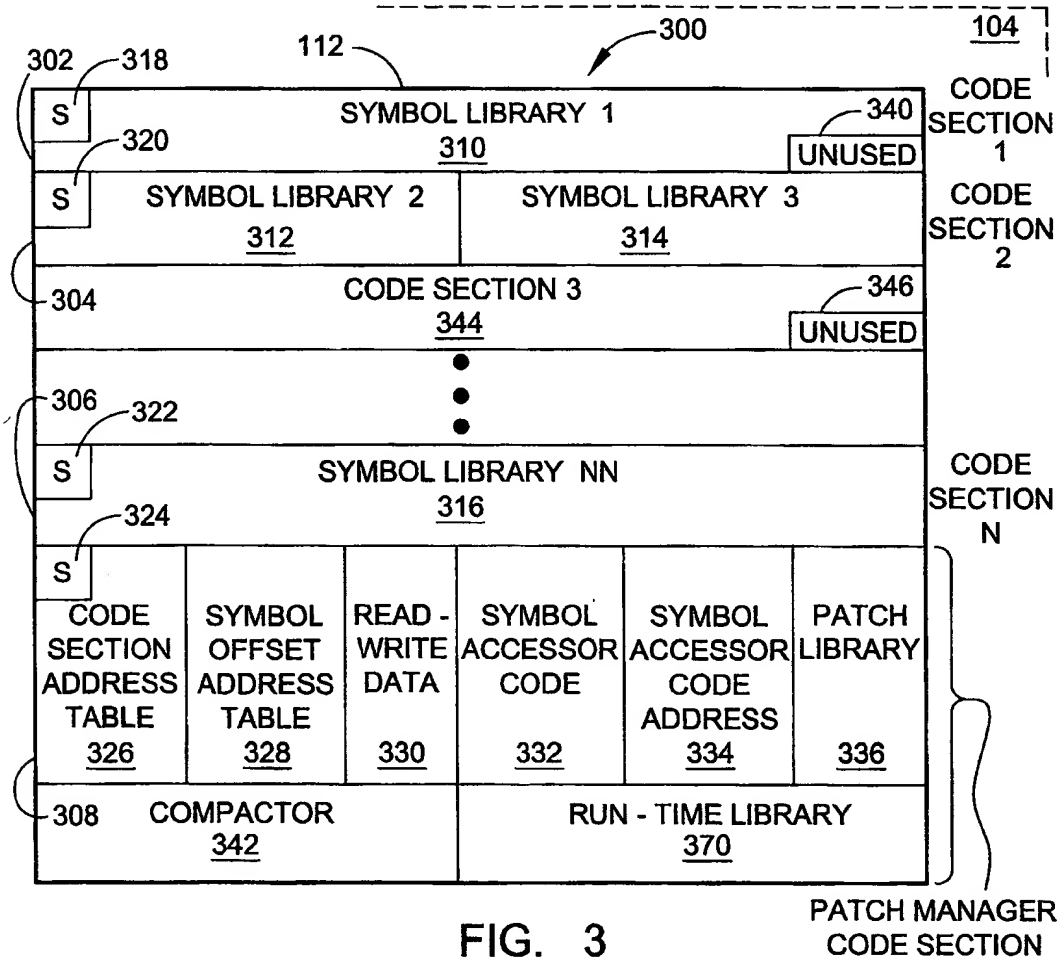
104
300
112
302
318
S
SYMBOL LIBRARY 1
310
340
UNUSED
CODE SECTION 1
320
S
SYMBOL LIBRARY 2
312
SYMBOL LIBRARY 3
314
CODE SECTION 2
304
CODE SECTION 3
344
346
UNUSED
306
322
S
SYMBOL LIBRARY NN
316
CODE SECTION N
324
S
CODE SECTION ADDRESS TABLE
326
SYMBOL OFFSET ADDRESS TABLE
328
READ - WRITE DATA
330
SYMBOL ACCESSOR CODE
332
SYMBOL ACCESSOR CODE ADDRESS
334
PATCH LIBRARY
336
308
COMPACTOR
342
RUN - TIME LIBRARY
370
PATCH MANAGER CODE SECTION

FIG. 3

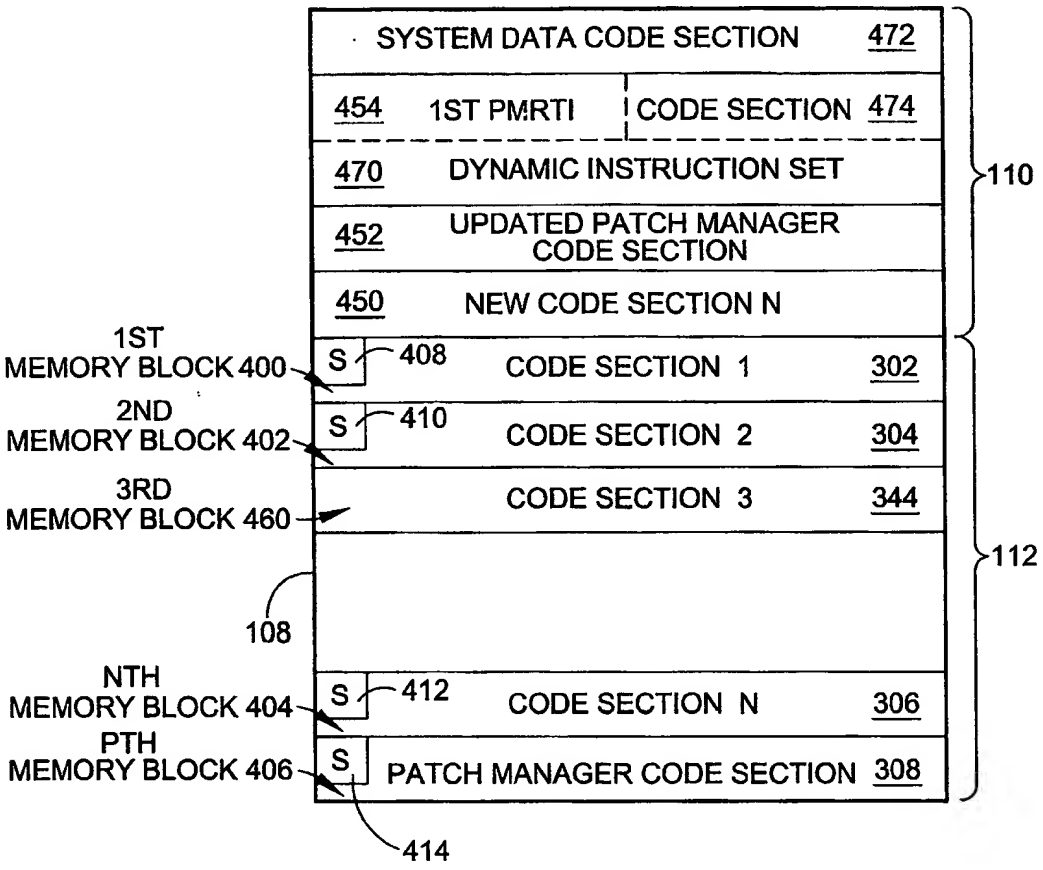
SYSTEM DATA CODE SECTION 472
454 1ST PMRTI
CODE SECTION 474
470 DYNAMIC INSTRUCTION SET
452 UPDATED PATCH MANAGER CODE SECTION
450 NEW CODE SECTION N
110
1ST MEMORY BLOCK 400
2ND MEMORY BLOCK 402
3RD MEMORY BLOCK 460
S
408
CODE SECTION 1 302
410
CODE SECTION 2 304
CODE SECTION 3 344
112
108
NTH MEMORY BLOCK 404
PTH MEMORY BLOCK 406
412
CODE SECTION N 306
PATCH MANAGER CODE SECTION 308
414

FIG. 4

326

CODE SECTION ADDRESS TABLE	
IDENTIFIERS	ADDRESSES
CS_1	START ADDRESS 1 (00100)
CS_2	START ADDRESS 2 (00200)
• • •	
CS_N	START ADDRESS N (00700)
PM	START ADDRESS P (01000)

FIG. 5

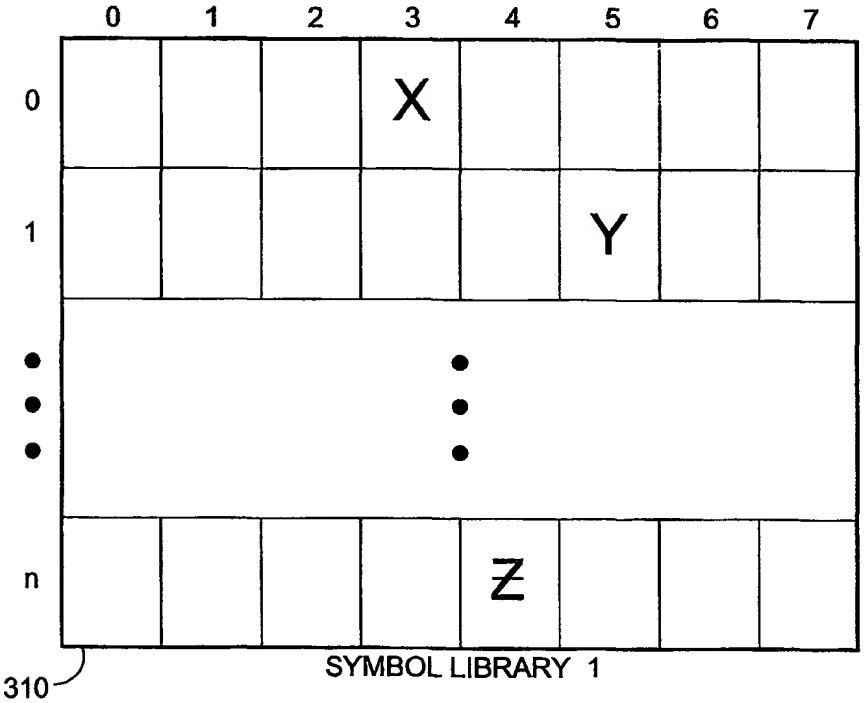

FIG. 6

SYMBOL OFFSET ADDRESS TABLE		
SYMBOL ID	CODE SECTION ID	OFFSET
X_1	CS_1	03
Y_1	CS_1	15
P_1	CS_2	11
Q_1	CS_2	33
AA_3	CS_2	47
• • •		

328

FIG. 7

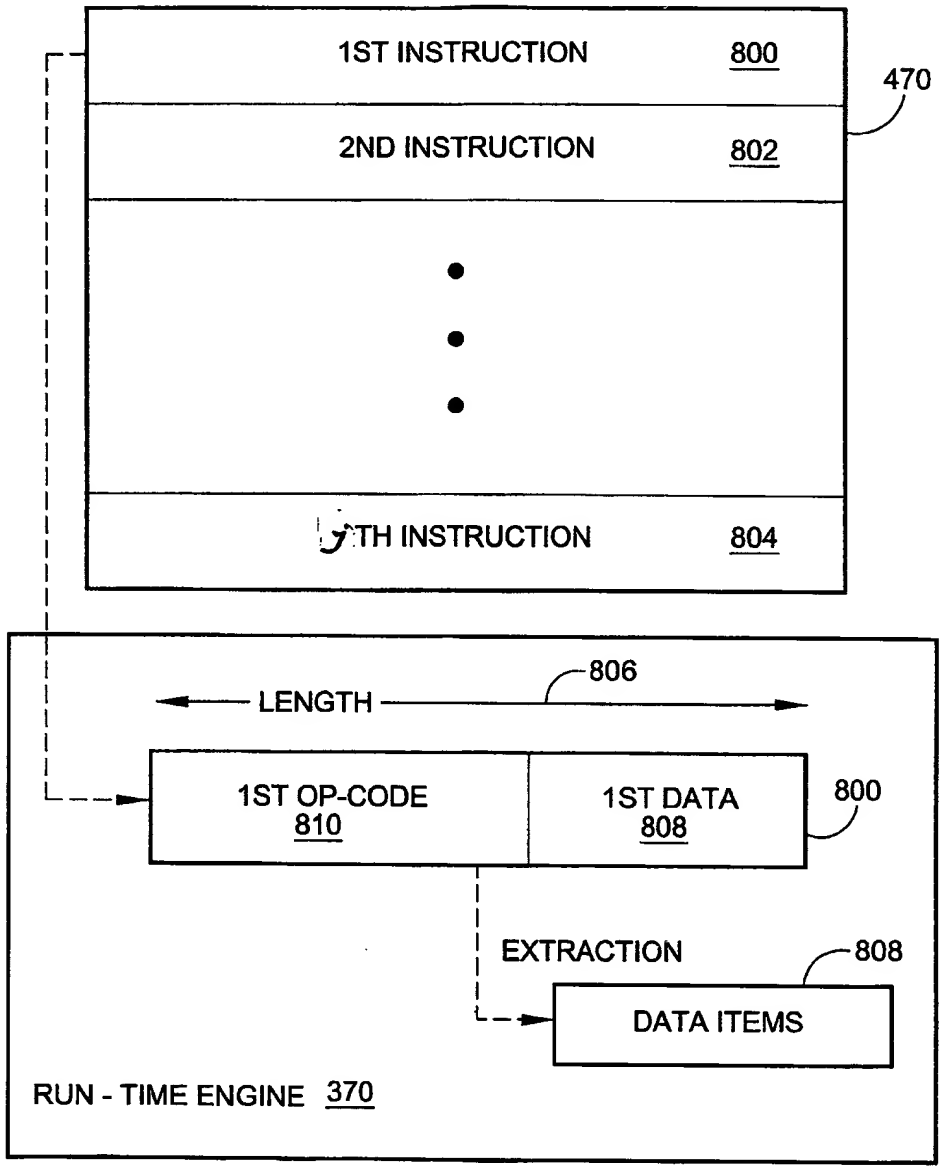
1ST INSTRUCTION 800
2ND INSTRUCTION 802
470
TH INSTRUCTION 804
806
LENGTH
1ST OP-CODE 810
1ST DATA 808
800
EXTRACTION
808
DATA ITEMS
RUN - TIME ENGINE 370

FIG. 8a

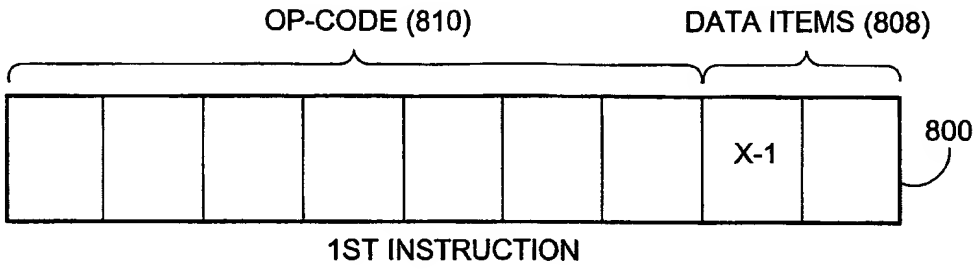
OP-CODE (810)
DATA ITEMS (808)
X-1
800
1ST INSTRUCTION

FIG. 8b

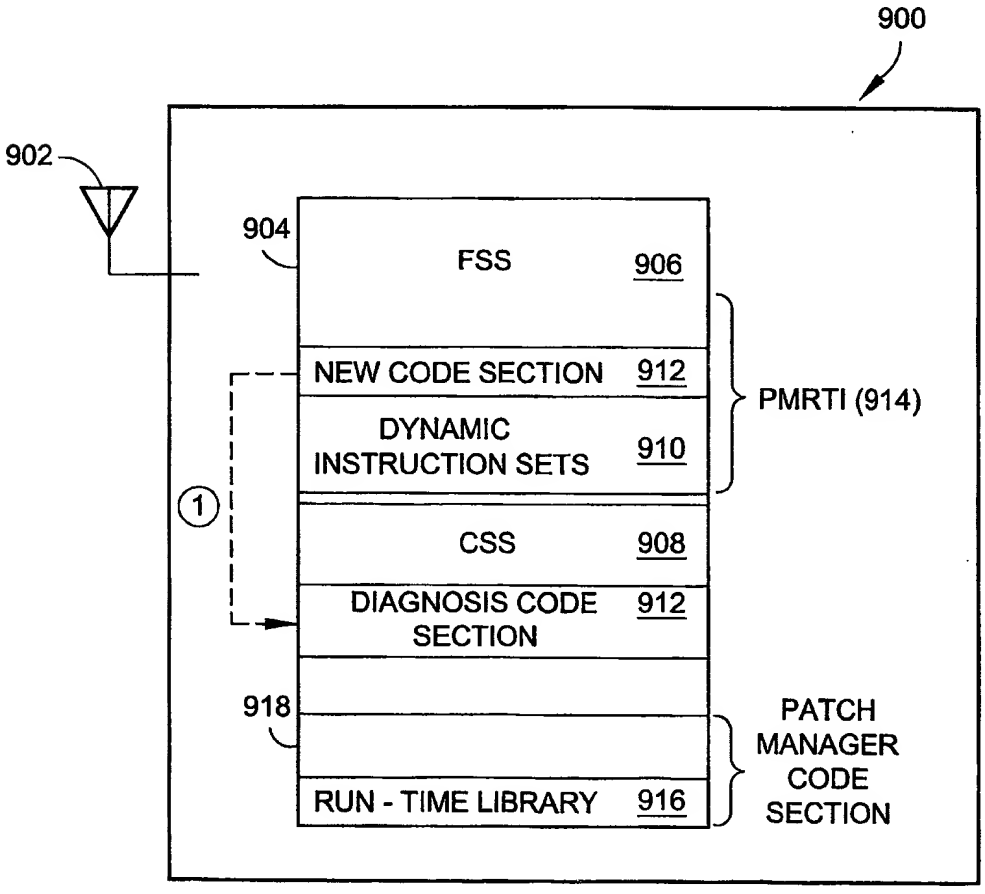
900
902
904
FSS
906
NEW CODE SECTION
912
DYNAMIC INSTRUCTION SETS
910
PMRTI (914)
1
CSS
908
DIAGNOSIS CODE SECTION
912
918
PATCH MANAGER CODE SECTION
RUN - TIME LIBRARY
916

FIG. 9

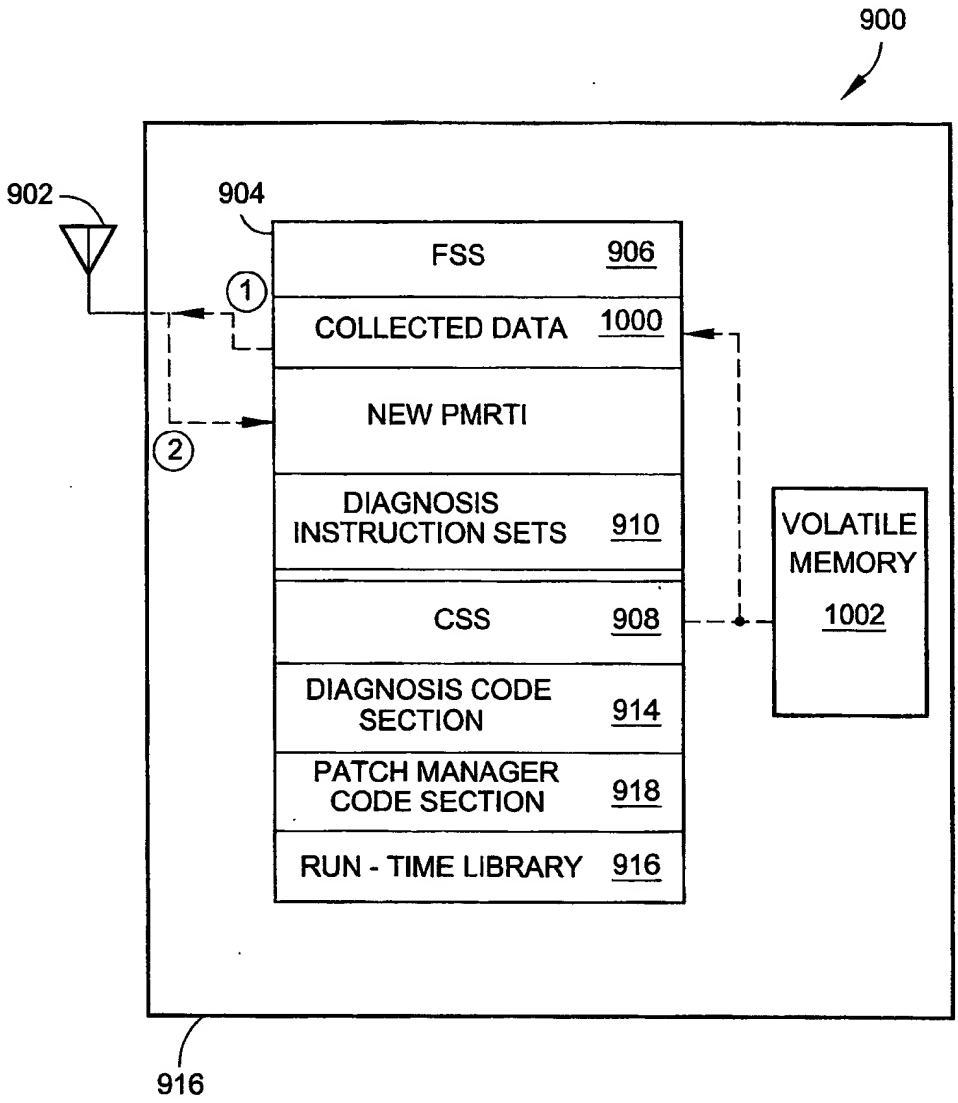
900
902
904
FSS 906
1
COLLECTED DATA 1000
NEW PMRTI
2
DIAGNOSIS INSTRUCTION SETS 910
CSS 908
DIAGNOSIS CODE SECTION 914
PATCH MANAGER CODE SECTION 918
RUN - TIME LIBRARY 916
VOLATILE MEMORY 1002
916

FIG. 10

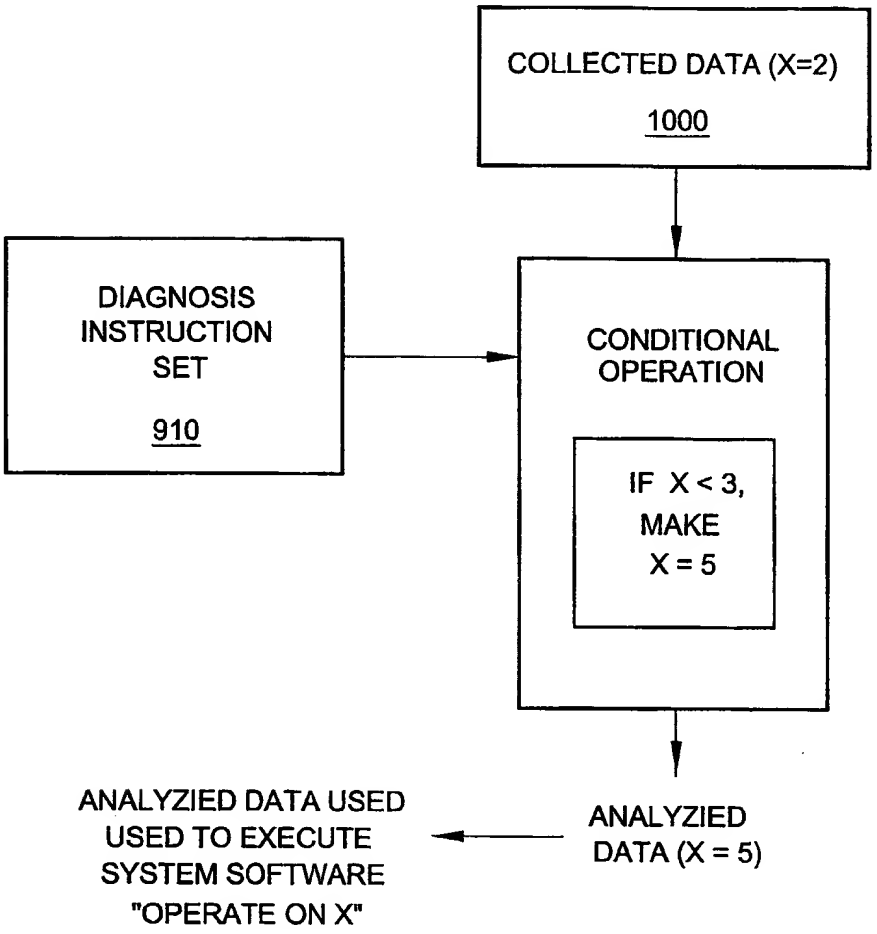
COLLECTED DATA (X=2)
1000
DIAGNOSIS INSTRUCTION SET
910
CONDITIONAL OPERATION
IF X < 3, MAKE X = 5
ANALYZIED DATA (X = 5)
ANALYZIED DATA USED USED TO EXECUTE SYSTEM SOFTWARE "OPERATE ON X"

FIG. 11

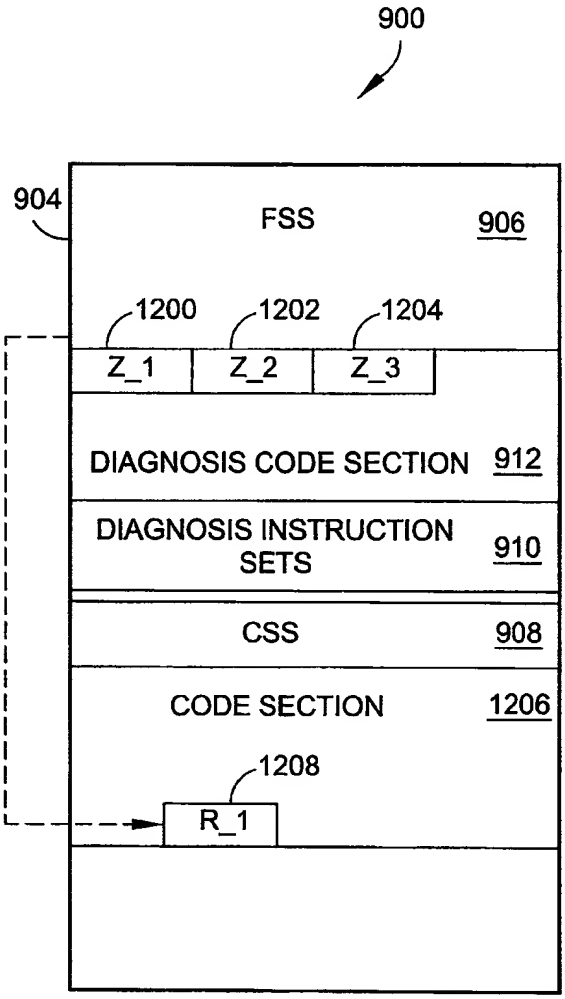
900
904
FSS
906
1200
1202
1204
Z_1
Z_2
Z_3
DIAGNOSIS CODE SECTION
912
DIAGNOSIS INSTRUCTION SETS
910
CSS
908
CODE SECTION
1206
1208
R_1

FIG. 12

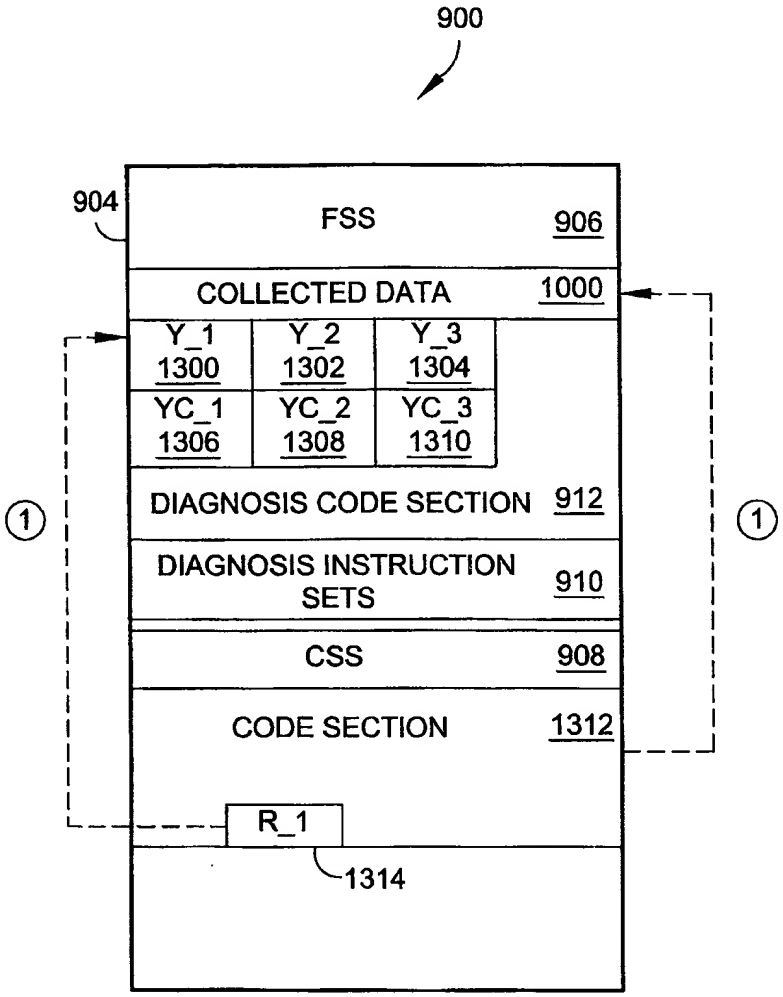
900
904
FSS
906
COLLECTED DATA
1000
Y_1
1300
Y_2
1302
Y_3
1304
YC_1
1306
YC_2
1308
YC_3
1310
DIAGNOSIS CODE SECTION
912
DIAGNOSIS INSTRUCTION SETS
910
CSS
908
CODE SECTION
1312
R_1
1314
1
1

FIG. 13

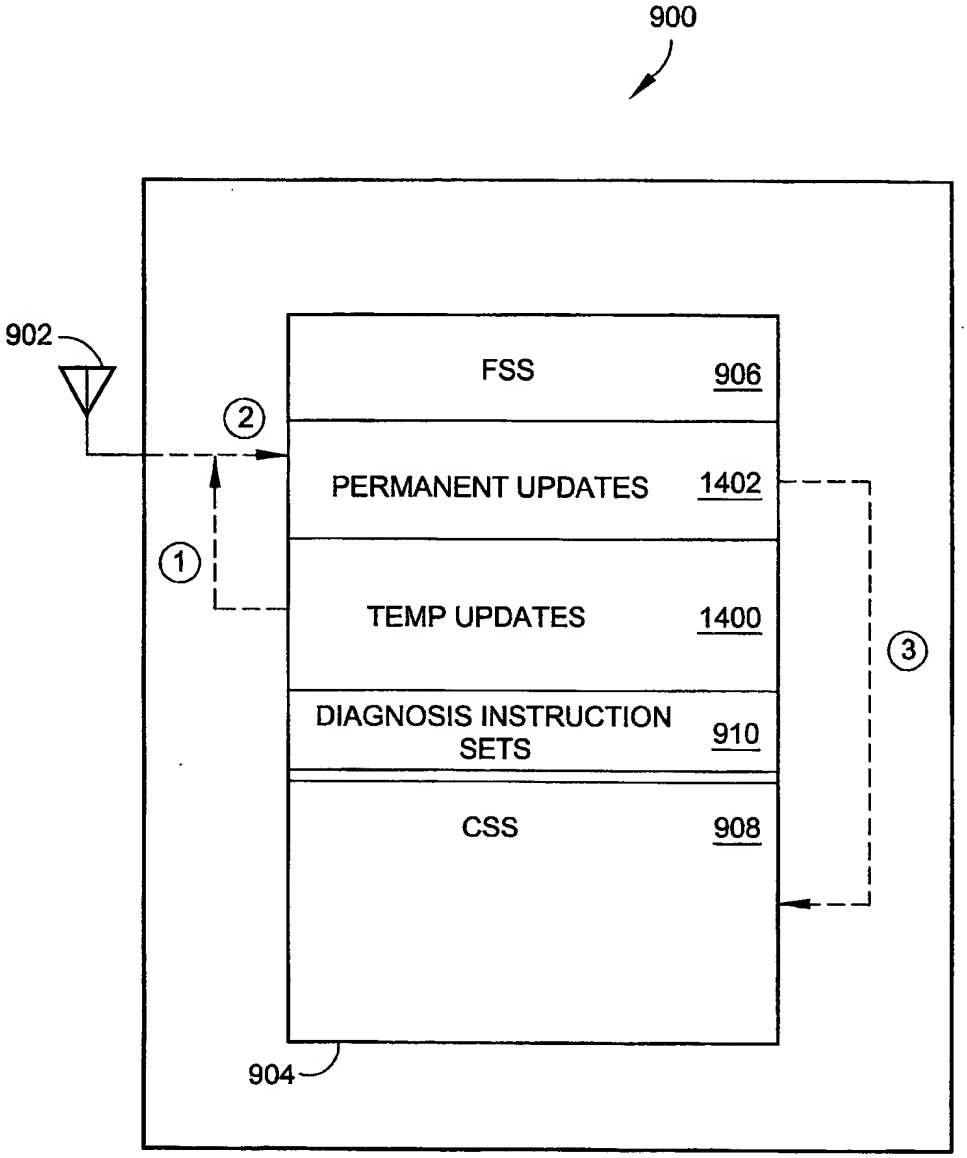
900
902
FSS
906
2
PERMANENT UPDATES
1402
1
TEMP UPDATES
1400
3
DIAGNOSIS INSTRUCTION SETS
910
CSS
908
904

FIG. 14

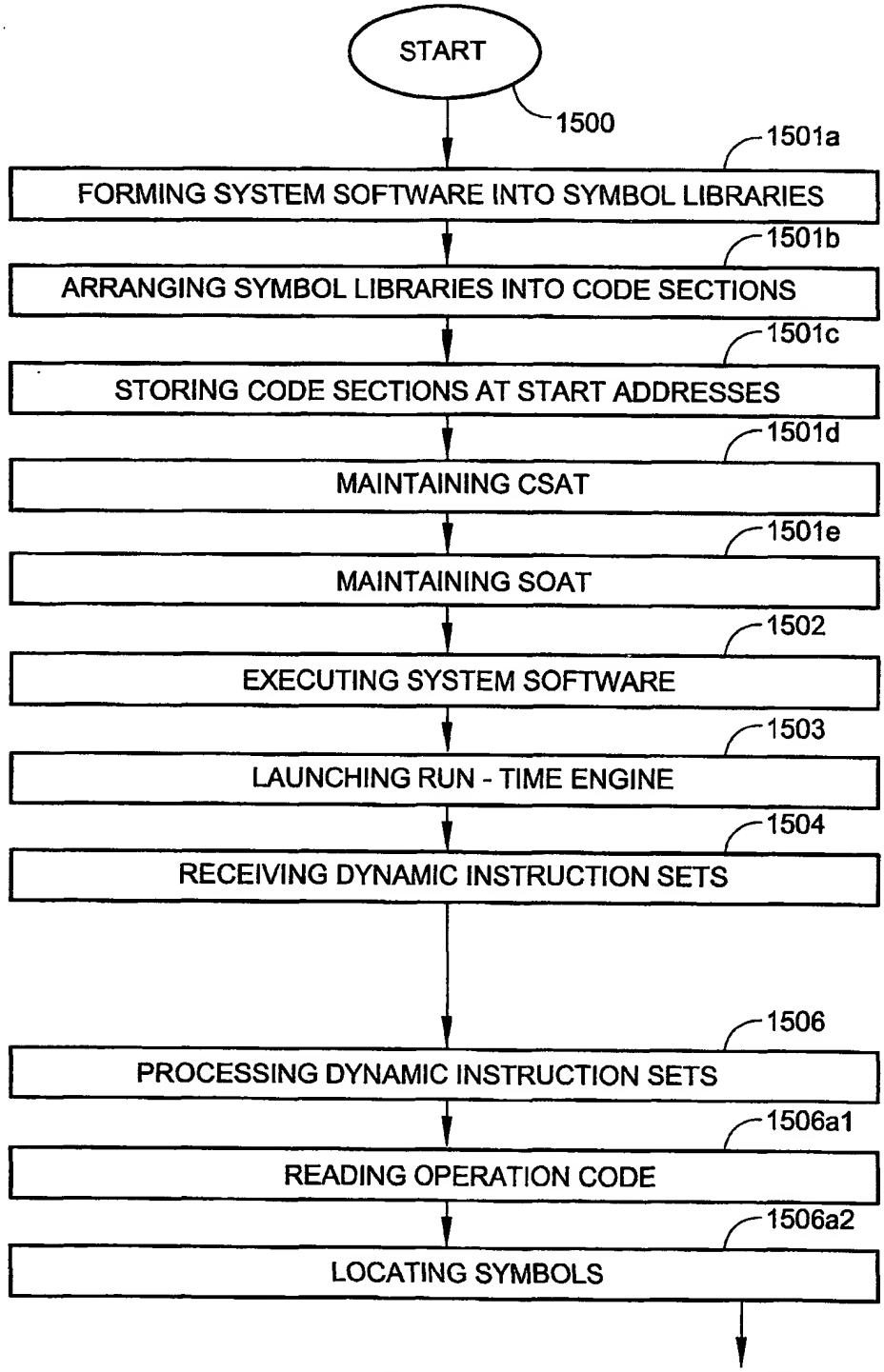
START
1500
1501a
FORMING SYSTEM SOFTWARE INTO SYMBOL LIBRARIES
1501b
ARRANGING SYMBOL LIBRARIES INTO CODE SECTIONS
1501c
STORING CODE SECTIONS AT START ADDRESSES
1501d
MAINTAINING CSAT
1501e
MAINTAINING SOAT
1502
EXECUTING SYSTEM SOFTWARE
1503
LAUNCHING RUN - TIME ENGINE
1504
RECEIVING DYNAMIC INSTRUCTION SETS
1506
PROCESSING DYNAMIC INSTRUCTION SETS
1506a1
READING OPERATION CODE
1506a2
LOCATING SYMBOLS
TO FIG 15b

FIG. 15a

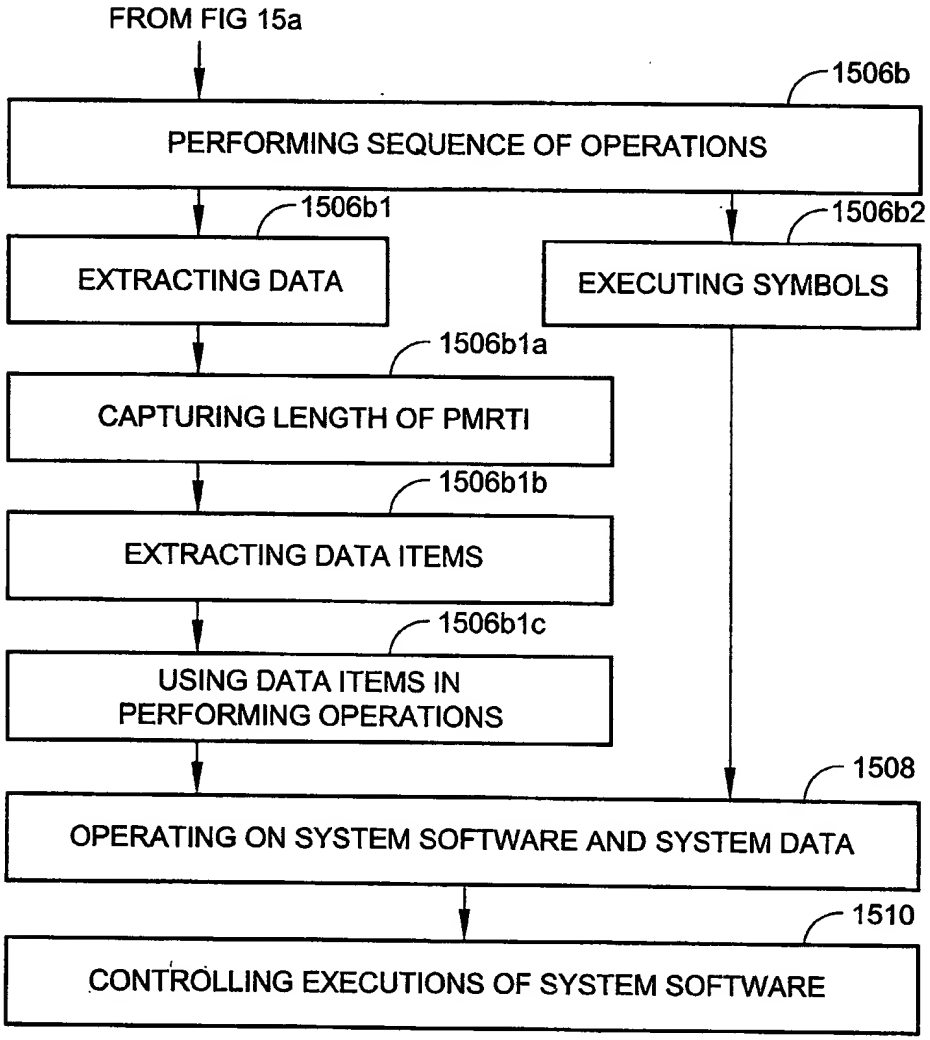
FROM FIG 15a
1506b
PERFORMING SEQUENCE OF OPERATIONS
1506b1
EXTRACTING DATA
1506b2
EXECUTING SYMBOLS
1506b1a
CAPTURING LENGTH OF PMRTI
1506b1b
EXTRACTING DATA ITEMS
1506b1c
USING DATA ITEMS IN PERFORMING OPERATIONS
1508
OPERATING ON SYSTEM SOFTWARE AND SYSTEM DATA
1510
CONTROLLING EXECUTIONS OF SYSTEM SOFTWARE

FIG. 15b

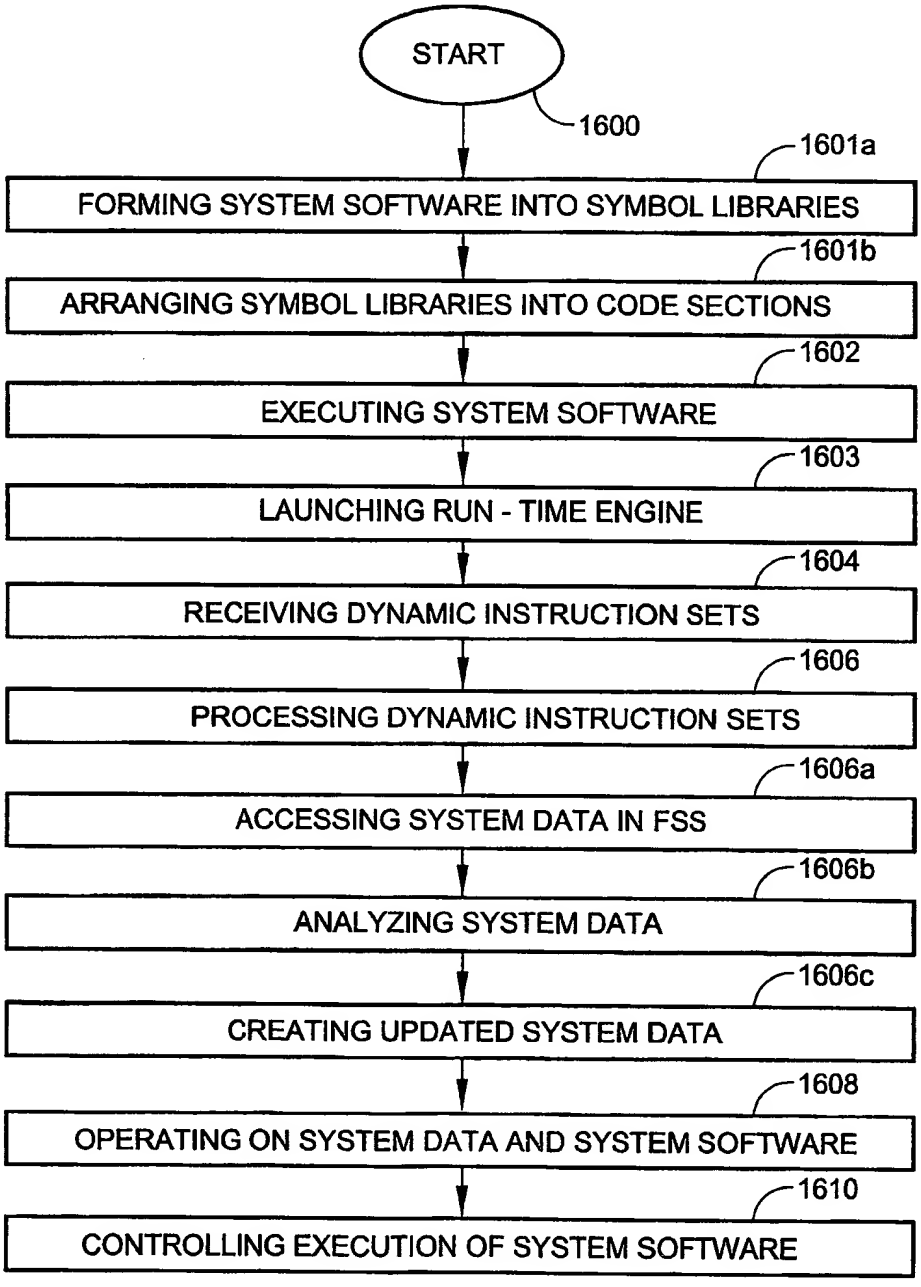
START
1600
1601a
FORMING SYSTEM SOFTWARE INTO SYMBOL LIBRARIES
1601b
ARRANGING SYMBOL LIBRARIES INTO CODE SECTIONS
1602
EXECUTING SYSTEM SOFTWARE
1603
LAUNCHING RUN - TIME ENGINE
1604
RECEIVING DYNAMIC INSTRUCTION SETS
1606
PROCESSING DYNAMIC INSTRUCTION SETS
1606a
ACCESSING SYSTEM DATA IN FSS
1606b
ANALYZING SYSTEM DATA
1606c
CREATING UPDATED SYSTEM DATA
1608
OPERATING ON SYSTEM DATA AND SYSTEM SOFTWARE
1610
CONTROLLING EXECUTION OF SYSTEM SOFTWARE

FIG. 16

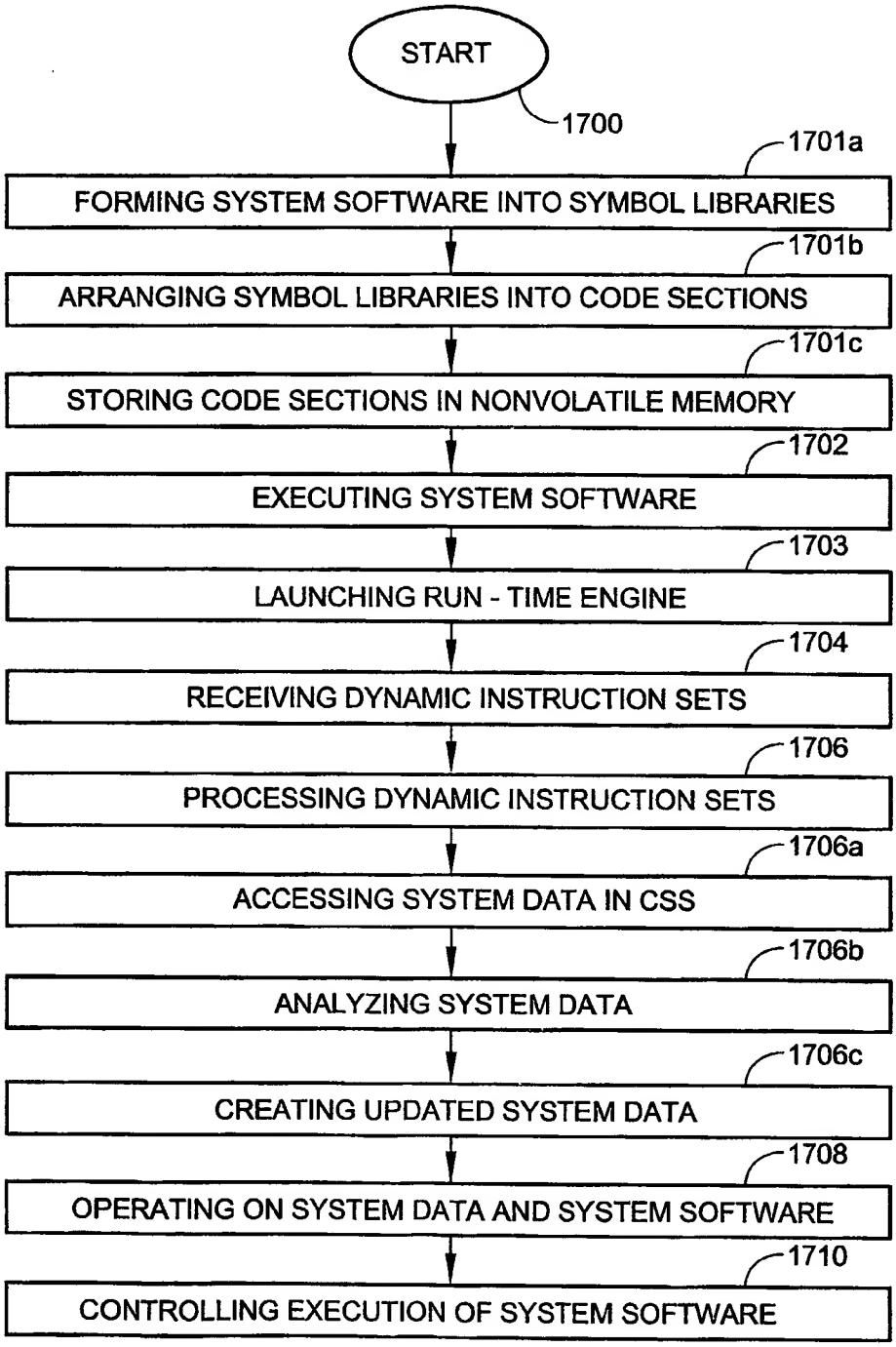
START
1700
1701a
FORMING SYSTEM SOFTWARE INTO SYMBOL LIBRARIES
1701b
ARRANGING SYMBOL LIBRARIES INTO CODE SECTIONS
1701c
STORING CODE SECTIONS IN NONVOLATILE MEMORY
1702
EXECUTING SYSTEM SOFTWARE
1703
LAUNCHING RUN - TIME ENGINE
1704
RECEIVING DYNAMIC INSTRUCTION SETS
1706
PROCESSING DYNAMIC INSTRUCTION SETS
1706a
ACCESSING SYSTEM DATA IN CSS
1706b
ANALYZING SYSTEM DATA
1706c
CREATING UPDATED SYSTEM DATA
1708
OPERATING ON SYSTEM DATA AND SYSTEM SOFTWARE
1710
CONTROLLING EXECUTION OF SYSTEM SOFTWARE

FIG. 17

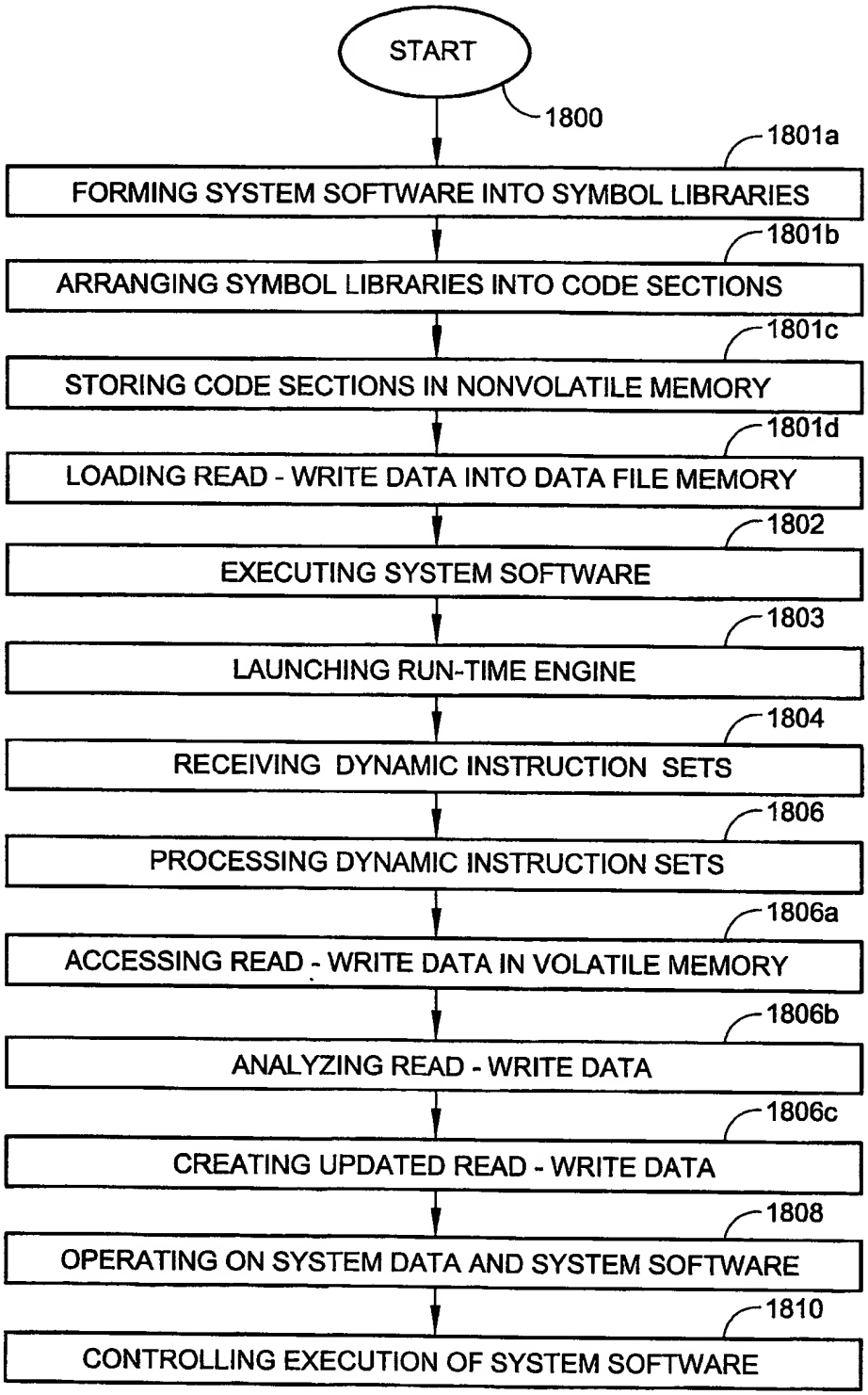
START
1800
1801a
FORMING SYSTEM SOFTWARE INTO SYMBOL LIBRARIES
1801b
ARRANGING SYMBOL LIBRARIES INTO CODE SECTIONS
1801c
STORING CODE SECTIONS IN NONVOLATILE MEMORY
1801d
LOADING READ - WRITE DATA INTO DATA FILE MEMORY
1802
EXECUTING SYSTEM SOFTWARE
1803
LAUNCHING RUN-TIME ENGINE
1804
RECEIVING DYNAMIC INSTRUCTION SETS
1806
PROCESSING DYNAMIC INSTRUCTION SETS
1806a
ACCESSING READ - WRITE DATA IN VOLATILE MEMORY
1806b
ANALYZING READ - WRITE DATA
1806c
CREATING UPDATED READ - WRITE DATA
1808
OPERATING ON SYSTEM DATA AND SYSTEM SOFTWARE
1810
CONTROLLING EXECUTION OF SYSTEM SOFTWARE

FIG. 18

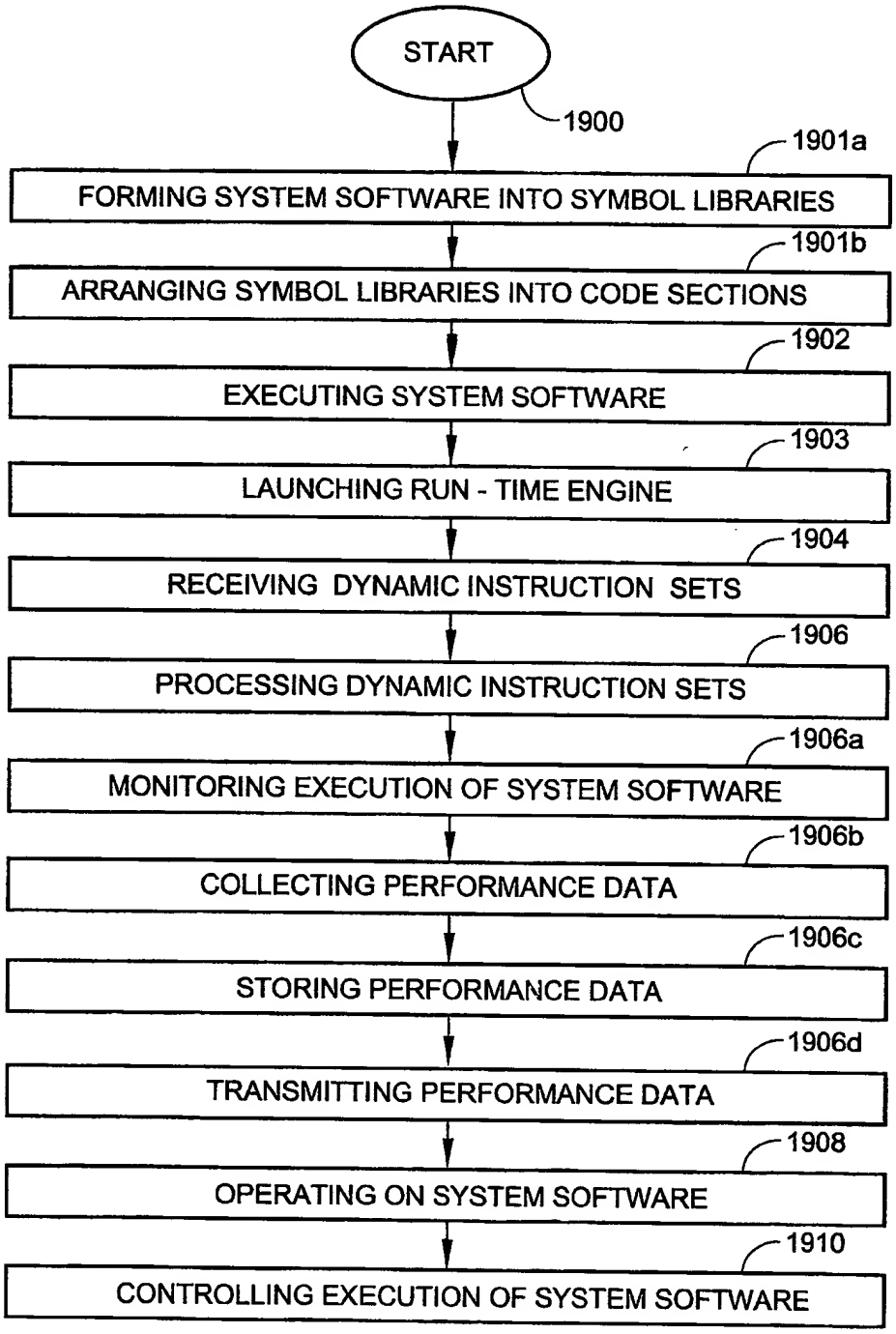
START
1900
1901a
FORMING SYSTEM SOFTWARE INTO SYMBOL LIBRARIES
1901b
ARRANGING SYMBOL LIBRARIES INTO CODE SECTIONS
1902
EXECUTING SYSTEM SOFTWARE
1903
LAUNCHING RUN - TIME ENGINE
1904
RECEIVING DYNAMIC INSTRUCTION SETS
1906
PROCESSING DYNAMIC INSTRUCTION SETS
1906a
MONITORING EXECUTION OF SYSTEM SOFTWARE
1906b
COLLECTING PERFORMANCE DATA
1906c
STORING PERFORMANCE DATA
1906d
TRANSMITTING PERFORMANCE DATA
1908
OPERATING ON SYSTEM SOFTWARE
1910
CONTROLLING EXECUTION OF SYSTEM SOFTWARE

FIG. 19

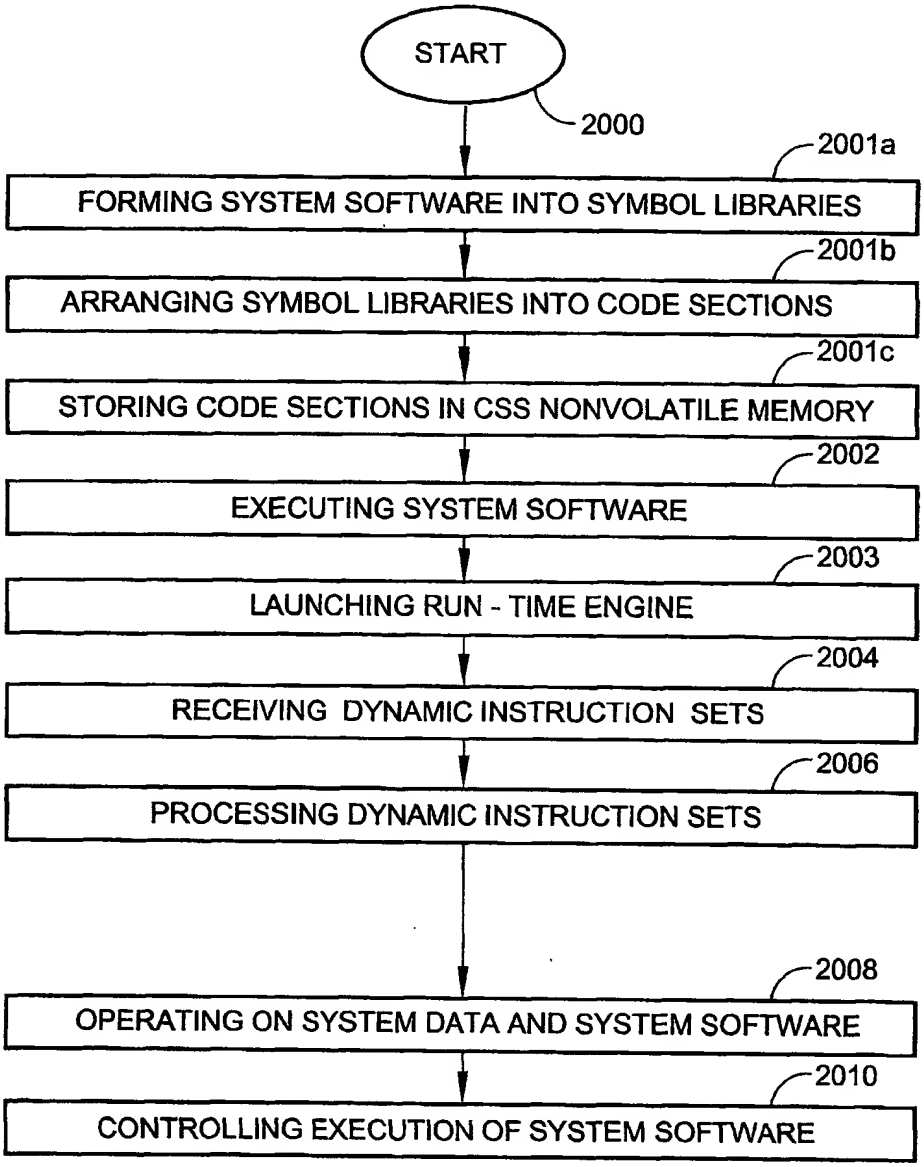
START
2000
2001a
FORMING SYSTEM SOFTWARE INTO SYMBOL LIBRARIES
2001b
ARRANGING SYMBOL LIBRARIES INTO CODE SECTIONS
2001c
STORING CODE SECTIONS IN CSS NONVOLATILE MEMORY
2002
EXECUTING SYSTEM SOFTWARE
2003
LAUNCHING RUN - TIME ENGINE
2004
RECEIVING DYNAMIC INSTRUCTION SETS
2006
PROCESSING DYNAMIC INSTRUCTION SETS
2008
OPERATING ON SYSTEM DATA AND SYSTEM SOFTWARE
2010
CONTROLLING EXECUTION OF SYSTEM SOFTWARE

FIG. 20

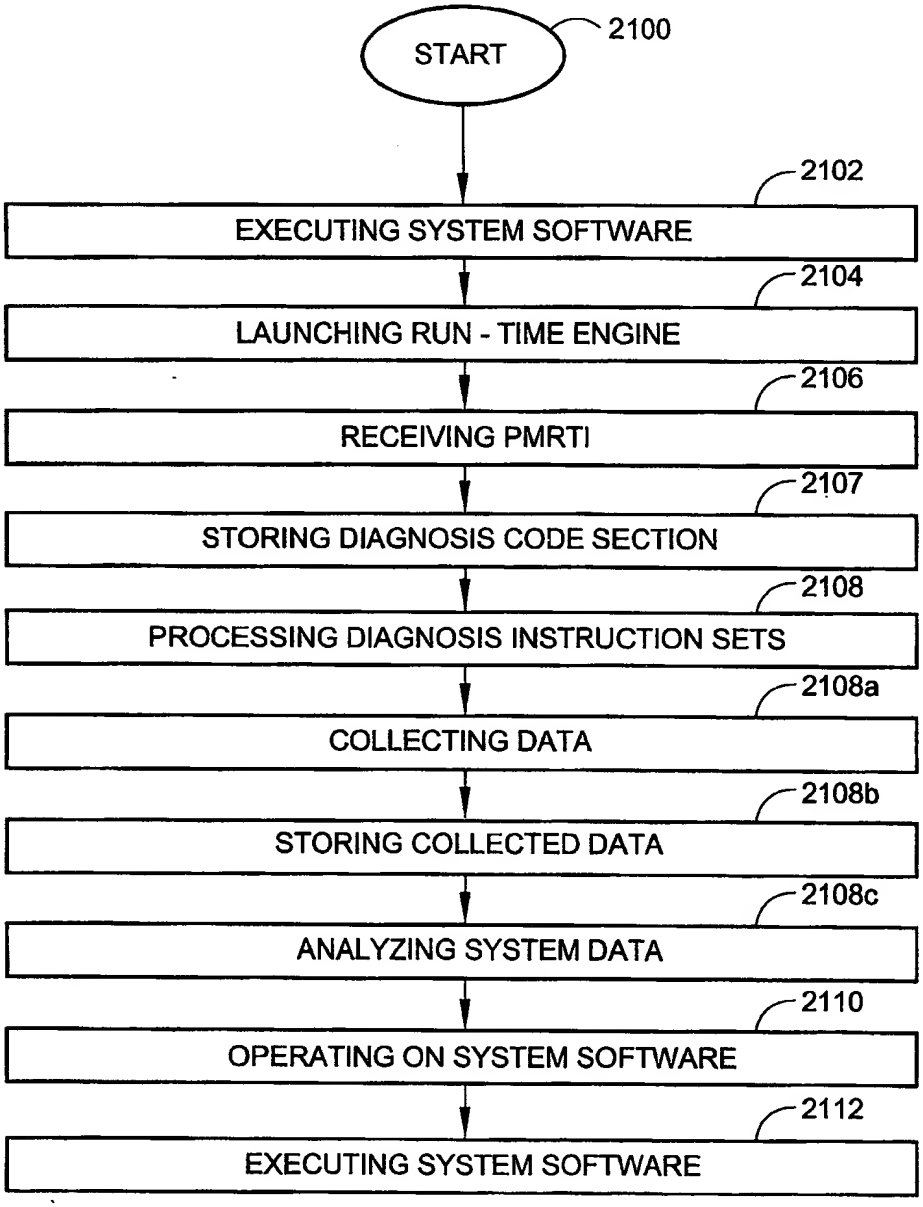
START
2100
2102
EXECUTING SYSTEM SOFTWARE
2104
LAUNCHING RUN - TIME ENGINE
2106
RECEIVING PMRTI
2107
STORING DIAGNOSIS CODE SECTION
2108
PROCESSING DIAGNOSIS INSTRUCTION SETS
2108a
COLLECTING DATA
2108b
STORING COLLECTED DATA
2108c
ANALYZING SYSTEM DATA
2110
OPERATING ON SYSTEM SOFTWARE
2112
EXECUTING SYSTEM SOFTWARE

FIG. 21

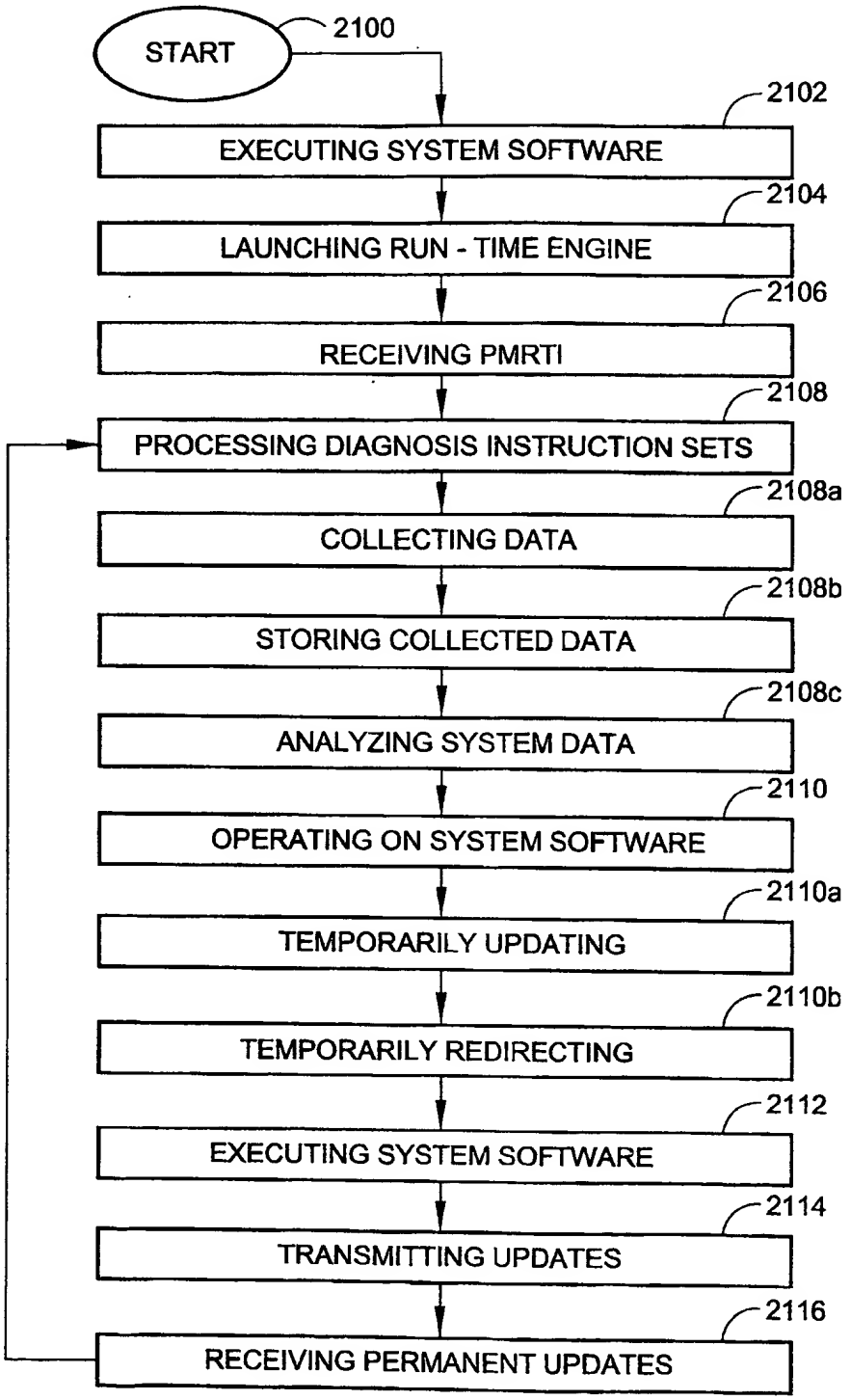
START
2100
EXECUTING SYSTEM SOFTWARE
2102
LAUNCHING RUN - TIME ENGINE
2104
RECEIVING PMRTI
2106
PROCESSING DIAGNOSIS INSTRUCTION SETS
2108
COLLECTING DATA
2108a
STORING COLLECTED DATA
2108b
ANALYZING SYSTEM DATA
2108c
OPERATING ON SYSTEM SOFTWARE
2110
TEMPORARILY UPDATING
2110a
TEMPORARILY REDIRECTING
2110b
EXECUTING SYSTEM SOFTWARE
2112
TRANSMITTING UPDATES
2114
RECEIVING PERMANENT UPDATES
2116

FIG. 22

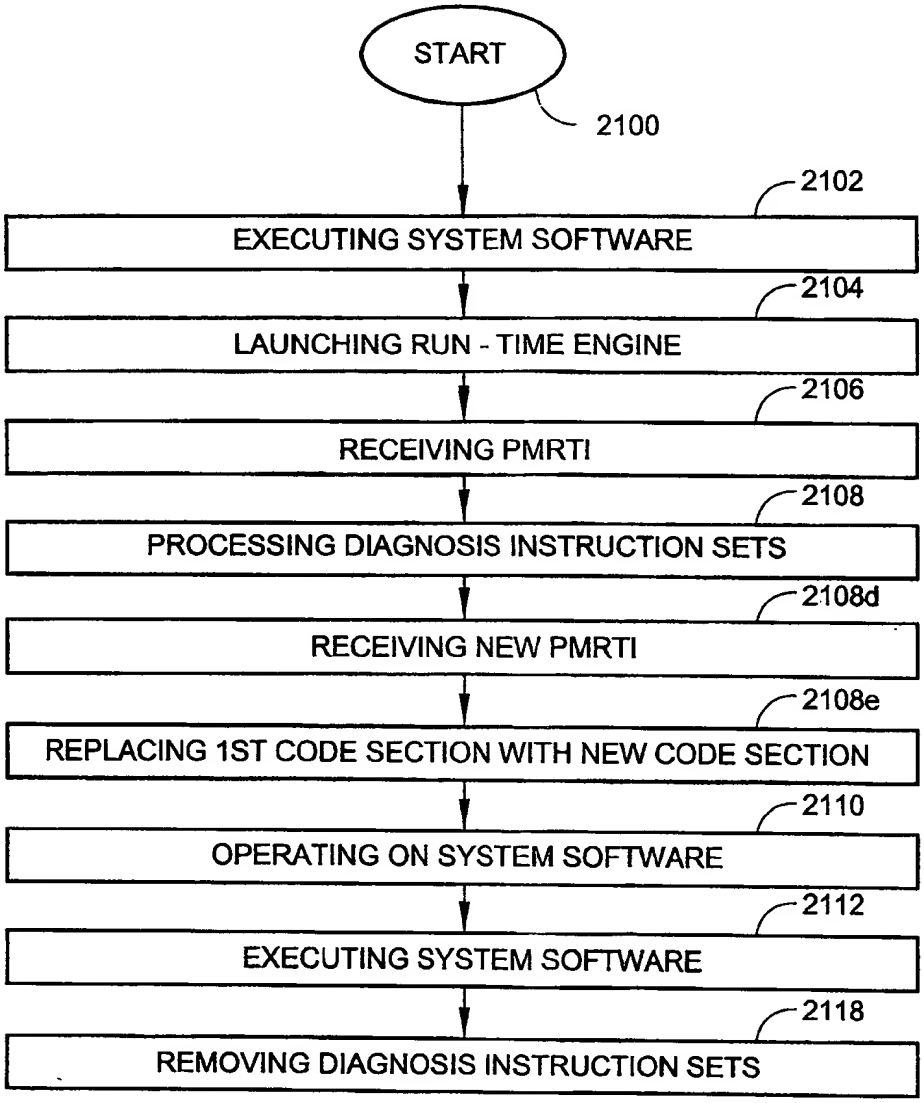
START
2100
2102
EXECUTING SYSTEM SOFTWARE
2104
LAUNCHING RUN - TIME ENGINE
2106
RECEIVING PMRTI
2108
PROCESSING DIAGNOSIS INSTRUCTION SETS
2108d
RECEIVING NEW PMRTI
2108e
REPLACING 1ST CODE SECTION WITH NEW CODE SECTION
2110
OPERATING ON SYSTEM SOFTWARE
2112
EXECUTING SYSTEM SOFTWARE
2118
REMOVING DIAGNOSIS INSTRUCTION SETS

FIG. 23